IN THE CLAIMS:

Please amend claims 46 by rewriting it to the following:

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Claim 46 (Amended). A TFT as in claim 32 in which said amorphous first film is doped with said transition metal to said first density of transition metal nucleus sites is less than 1×10^7 per square centimeter.

Please add the following new claims 61-75:

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Claim 61 (New). A thin-film transistor (TFT) structure, comprising:

a film of semiconductor material formed on a transparent substrate, said semiconductor material including a first area in which the semiconductor material is crystallized around selected transition metal nucleation sites;

source/drain and channel regions formed in said first area; and

the distance between said transition metal nucleation sites is no less than 2 microns, whereby a transistor is formed having high electron mobility and low leakage current in the transistor active areas.

Claim 62 (New). A TFT structure as in claim 61 further including a gate electrode formed on said first area and a gate oxide layer overlying said gate electrode, in which said gate electrode and gate oxide layer are deposited before said first film, whereby a bottom gate TFT is fabricated.

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Claim 63 (New). A TFT structure as in claim 61 further including a gate oxide layer overlying said channel region in said first area and a gate electrode overlying said gate oxide layer, whereby a top gate TFT is fabricated.

Claim 64 (New). A TFT structure as in claim 61 in which said film of semiconductor material is selected from the group consisting of silicon, germanium, silicon carbide, and silicon-germanium compounds.

Claim 65 (New). A TFT structure as in claim 61 in which the transition metal nucleation sites include transition metal selected from the group consisting of Al, Ni, Ti, Co, and Pd.

Claim 66 (New). A TFT structure as in claim 61 in which a transition metal semiconductor compound surrounding said first area of crystallized semiconductor material is removed when said source/drain regions are defined, whereby said crystallized semiconductor material is cleaned of materials which promote high leakage currents.

Claim 67 (New). A TFT structure as in claim 61 in which said first area is a rectangular window overlying an area of said semiconductor material which is crystallized, said first area having a width in the range from 20 to 50 microns.

Claim 68 (New). A TFT structure as in claim 61 in which said film of semiconductor material in said first area is doped with a transition metal to a concentration of less than 2×10^{19} atoms per cubed centimeter.

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Claim 69 (New). A TFT structure as in claim 61 in which said film of semiconductor material in said first area is doped with a transition metal to a density of transition metal nucleus sites of less than 1×10^7 per square centimeter.

Claim 70 (New). A TFT structure as in claim 61 in which said first area of crystallized semiconductor material has an area in the range from 20 to 8,000 square microns (μ^2).

Claim 71 (New). A TFT structure as in claim 61 in which the concentration of transition metal nucleuses in said first area is controlled by depositing an insulator film having a first thickness over said film of semiconductor material, and in which transition metal is deposited overlying said insulator film such that said transition metal diffuses through said insulator film into said semiconductor material during annealing.

Claim 72 (New). A TFT structure as in claim 71 in which said transition metal overlying said insulator film is selectively etched before annealing to form said transition metal window, whereby the size of said first area of crystallized first film is influenced.

Claim 73 (New). A TFT structure as in claim 71 in which said insulator film is deposited with an initial thickness and selectively etched to form an area having a first thickness, less than the initial thickness, in said first area, and in which said transition metal is deposited over said first